

CLAIMS

- add A1
1. A method for measuring stress forces in refiners having refining discs that between them define a refining gap for refining material between bars (3) arranged on the refining discs, **characterized** in that measurement is performed across a measuring surface (7) constituting a part of a refining disc, said measuring surface comprising at least parts of more than one bar (3) and being resiliently mounted in relation to the surface of the refining disc.
2. A method as claimed in claim 1, **characterized** in that measurement is performed by the measuring surface being resiliently journaled in a direction parallel with the surface of the refining disc and being movable in said direction in the event of a stress force, in relation to a permanently inserted force sensor with which the measuring surface is connected, said force sensor thus being influenced by and measuring said stress force.
3. A method as claimed in claim 1 or claim 2, **characterized** in that the size and distribution of the output transferred to the material are calculated on the basis of the measured stress forces and that these calculations are then used to control the refining process.
4. A measuring device for measuring stress forces in refiners comprising refining discs that between them define a refining gap for refining material between bars (3) arranged on the refining discs, **characterized** in that said device comprises members (10) that measure the stress force across a measuring surface (7) constituting a part of a refining disc, in that said measuring surface comprises at least parts of more than one bar (3) and being resiliently mounted in relation to the surface of the refining disc.
5. A measuring device as claimed in claim 4, **characterized** in that it comprises a force sensor (10) and a body (17) that connects said sensor to the measuring surface (7).
6. A measuring device as claimed in claim 5, **characterized** in that the force sensor (10) abuts said body (17) while at the same time being fixed in relation to said body by means of attachment means (20).

7. A measuring device as claimed in claim 6, **characterized** in that it comprises members (12, 17) for resilient journalling of the measuring surface in a direction essentially parallel with the surface of the refining disc.

5 8. A measuring device as claimed in claim 7, **characterized** in that the measuring surface (7) is connected to said body (17) and in that, furthermore, the part of said body that extends on the side of the force sensor (10) opposite to the measuring surface, is provided with a joint (8) where the body is movable in a direction substantially parallel with the surface of the refining disc.

10 9. A measuring device as claimed in claim 8, **characterized** in that the body (17) is substantially circular in cross section and that the joint (8) is formed by a part of the body, located below the force sensor (10), being flattened.

15 10. A measuring device as claimed in any of claims 5-9, **characterized** in that the force sensor (10) is a piezoelectric sensor.

20 11. A measuring device as claimed in any of claims 4-10, **characterized** in that said measuring surface (7) constitutes a part of the measuring device and that the measuring surface is surrounded by a sealing member (12) by which it is joined to surrounding parts of the measuring device, and which sealing member (12) is made of a somewhat yielding material.

25 12. A measuring device as claimed in claim 11, **characterized** in that it comprises a casing (22), that the force sensor (10) and the body (17) are arranged inside said casing, that the force sensor is attached inside the casing by means of said attachment means (20) and is thus secured in relation to said body, that one end of the body, opposite to the end joined to the measuring surface, is secured in the casing and that the casing is closed by means of the measuring surface (7) and the sealing member (12).

30 13. A measuring device as claimed in claim 12, **characterized** in that the sealing member is arranged in a sleeve (13) which sleeve, with the sealing member (12) and measuring surface (7), is inserted in the casing (22) in order to seal the casing.

35